

**REMARKS**

Claims 1-12 are pending in the application. By this Amendment, claims 1, 5 and 9 have been amended. It is submitted that this Amendment is fully responsive to the Office Action dated May 8, 2009.

**Claim Rejections - 35 U.S.C. §103**

Claims 1-12 are rejected under 35 U.S.C. §103(a) as being unpatentable over Takenaka et al. (USP 5,357,433) in view of De Beaucourt et al. (USP 5,421,426) further in view of Nishikawa et al. (USP 5,255,753).

This rejection is respectfully traversed. Independent claim 1, as amended, now recites “*the force sensors provided to the regions next to end edges of respective soles detect a contact of foot sides to an obstacle while the foot portion is moved*” and “*the compensation part adjusts the gait data from the gait forming part so as to maintain a robot's stability*, referring to the contact of foot sides.” Also, independent claims 5 and 9 have been amended to include similar features. This Amendment is supported by, for example, the specification (page 2, paragraph 0006 and page 5, paragraph 0016).

Specifically, the present claimed invention relates to techniques to solve a problem described, for example, in the paragraph 0006:

However, for the biped walking robot of such constitution, the force sensor provided at a foot sole merely measures horizontal floor reaction force as was explained above, and if a foot side hits an obstacle while a foot portion is moved, for example, during walking motion of a biped walking robot, said robot can not recognize the contact of the foot side to such an obstacle, tries to continue walking, and thereby falls down in some cases.

The solution for the above problem is described, for example, in the paragraph 0016:

Therefore, if a foot side contacts a matter during a robot's walking motion of respective foot portion, the contact of the foot side is detected by the force sensors, the gait data is adjusted based on the horizontal floor reaction force generated from the friction force of the sole with a floor surface, referring to the contact of the foot side, and a stability of a main body, preferably the robot's upper body is attempted. Thus, if a robot's respective foot portions hit, for example, an obstacle on the floor surface or a step or others, the contact of a foot side is detected and adjusted by the force sensors, thereby the robot's stability is maintained, and walk control is assured without falling down.

That is, the present claimed invention provides the techniques to prevent a robot from falling down and to keep its stability. The claims have been amended to specify the characteristic: the force sensors detect a foot-contact with an obstacle while foot portions are moving.

It is submitted that the Takenaka, De Beaucourt and Nishikawa references do not provide any solution for the above problem. Especially, the Examiner's alleged disclosure of column 3, lines 44-47 of Takenaka describes:

The sole of each foot is equipped at its four corners with touchdown switches 38, not illustrated in FIG. 1, of conventional design for detecting whether or not the foot is in contact with the ground (emphasis added).

Therefore, none of the cited references discloses or fairly suggests the claimed feature of the force sensors provided to the regions next to end edges of respective soles which detect a contact of foot sides to an obstacle while the foot portion is moved.

Accordingly claims 1, 5 and 9 distinguish over Takenaka, De Beaucourt and Nishikawa.

Claims 2-4, 6-8 and 10-12 are dependent from claim 1, 5 or 9 and recite the additional features set forth therein. Accordingly claims 2-4, 6-8 and 10-12 also distinguish over Takenaka, De Beaucourt and Nishikawa for at least the reasons set forth above.

In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

Application No. 10/517,377  
Art Unit: 3664

Amendment under 37 C.F.R. §1.116  
Attorney Docket No. 043082

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,  
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